Rockwell International

Service And Parts Manual

MODEL 64RD

1000-0443

FUNCTIONAL TEST

Keyboard Entry	Display
*88888888	88888888. 00
[+/-]	-88888888. 00
[EE]	-88888888. 00
88	-88888888. 88
[+/-]	-88888888.-88
Sw. to RAD Position	
[C/CE]	0.
[π]	3.1415926 00
[COS]	-1.0000000 00
Sw. to DEG Position	
[INV]	-1.0000000 00
[SIN]	-90.000000 00
[INV]	-90.000000 00
[TAN]	-89.363400 00
[+/-]	89.363400 00
[-]	89.363400 00
60	60.
[X]	29.363400 00
.5	0.5
[÷]	14.681700 00
[Ln]	2.6866000 00
[Log]	4.2920300-01
[STO]	4.2920300-00
[M+]	4.2920300-01
[1/X]	2.3298998 00
[(]	2.3298998 00

Functional Test

Keyboard Entry

.94	0.94
EE	0.94 00
3	0.94 03
+	940.00000 00
7	7.
C/CE	0.
8	8.
)]	948.00000 00
X⇔Y	2.3298998 00
=	406.88445 00
RCL	8.5840600-01

Sw. to GRAD Position

C/CE	0.
45	45.
INV	45.
√	2025.0000 00
P→R	2024.8200 00
INV	2024.8200 00
DEG	49.200000 00
EE	1. 00
12	1. 12

Turn Calculator Off

*Decimal should travel across display as eights are entered.

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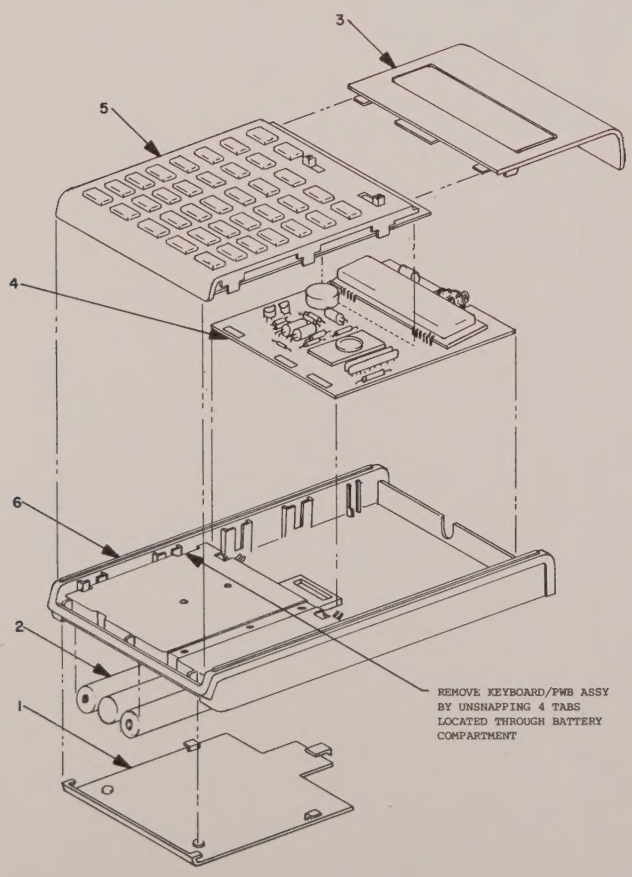
64RD ACCESSORIES

Part Number	Description
8102-4762	Gift Carton
8102-4764	Insert Gift Carton
1226R11-001	Instruction Manual
20175D64-001	Carrying Case
105R	Adapter
109R	Rechargeable Kit Available (includes charger & batteries)

64RD TOP ASSEMBLY

Ref. No.	Part Number	Description
1	8102-4585	Battery Cover (includes 2 rubber feet)
2	8102-4598	Batteries (AA Nonrechargeable) 3 required
3	8102-4760	Lens
4	8102-4753	Printed Circuit Board Assembly (Less Display)
5	8102-4754	Keyboard Assembly (includes Bezel)
6	8102-4759	Bottom Case (includes Battery Clips and 2 rubber feet)
	8102-4738	Battery Clip Single, 2 required
	8102-4597	Battery Clip Double, 3 required
	8102-4761	Identification Label
	8102-4730	Rubber Feet, 4 required

Note: Ref. No. sequence in order of disassembly.
Items 4 and 5 come out as an assembly

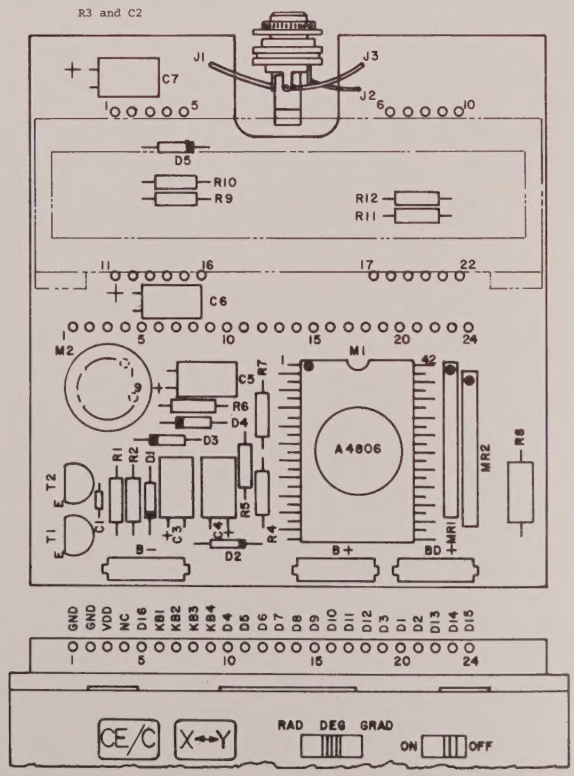


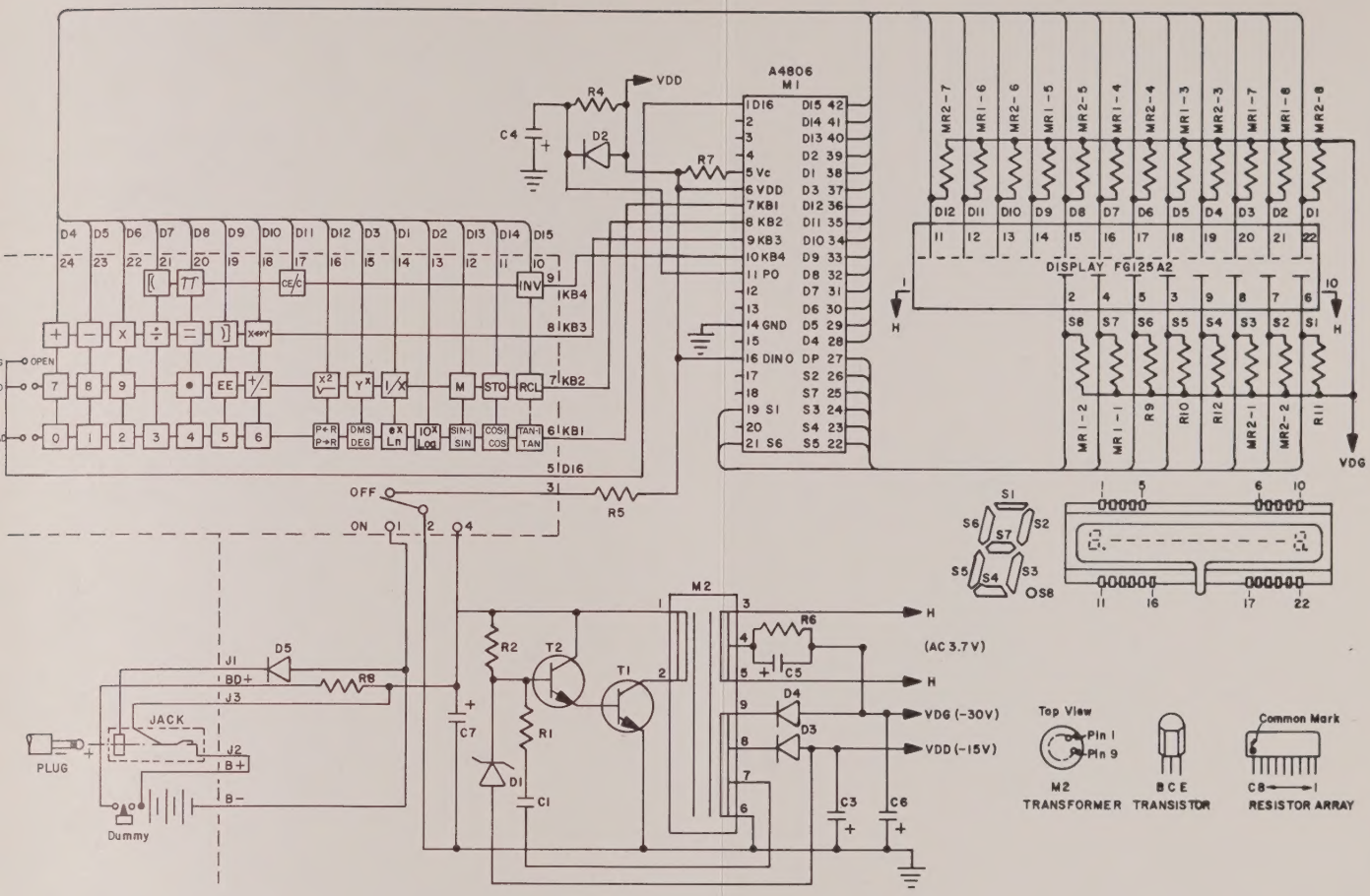
64RD LOGIC ASSY.

Ref. No.	Part Number	Description
	8102-4753	Printed Circuit Board Assembly (Less Display)
	8102-4755	Printed Circuit Board (Plain)
T1	4800-0064	Transistor 2SC1210
T2	4800-0009	Transistor 2SC711
D1	4801-0076	Diode, Zener 16.5V ± 3%
D2, D3	4801-0079	Diode Switching 1S2472
D4	4801-0078	Diode Switching 1S2471
D5	4801-0084	Diode SR-10D
R1, R5	421R02-101	Resistor Carbon Comp. 1K ohm 1/4W 5%
R2	421R02-048	Resistor Carbon Comp. 22K ohm 1/4W 10%
R4	421R02-106	Resistor Carbon Comp. 200K ohm 1/4W 10%
R6	421R02-037	Resistor Carbon Comp. 2.7K ohm 1/4W 10%
R7	421R02-079	Resistor Carbon Comp. 56K ohm 1/4W 5%
R8	421R05-012	Resistor Carbon Comp. 47 ohm 1/2W 10%
R9, R10, R11, R12	1408-0109	Resistor Carbon Comp. 150K ohm 1/4W 10%
MR1, MR2	1408-0200	Resistor Array 150K ohm X 8
C1	1502-0072	Capacitor, Ceramic Disc 470PF 50V
C3	401R01-001	Capacitor Radial Lead 10uf 25V
C4	1502-0071	Capacitor Radial Lead 0.47 uf 50V
C5	1502-0070	Capacitor Radial Lead 1uf 50V
C6	1502-0069	Capacitor Radial Lead 4.7uf 50V
C7	1502-0068	Capacitor Radial Lead 33uf 10V
M2	8102-4756	DC-DC Converter
M1	A4806	MOS/LSI
	8102-4757	24 Pin Connector (Keyboard to PWB)
	313R09-001	Jack
	209R05-001	Display
	8102-4758	Display Base (2 required)

Note: The following Ref. Designations are not used on this Assy and is not shown on the schematic.

R3 and C2





TROUBLE SHOOTING TABLE

SYMPTOM	PROBABLE CAUSE	CHECK
Display does not light.	Discharged batteries.	Check battery voltage. Should be greater than 2.4 volts.
	Defective On-Off switch.	Check switch for continuity in On position.
	Defective AC adapter jack.	Check adapter for continuity between J2 and J3.
	Defective power supply.	Check power supply circuitry
	Defective MOS device.	Check MOS strobe signals.
	Defective display.	Check filament continuity.
Dim display.	Discharged betteries.	Check battery voltage. Should be greater than 2.4 volts.
	Defective power supply.	Check power supply circuitry.
	Defective display.	Replace the display.
Will not clear when initially turned ON.	On-Off switch.	Check for switch bounce.
	MOS device.	Check VDD voltage.
Random segments or decimal points missing from one or more digits.	Display.	Check the display solder connections. If good, replace the display.
	MOS device.	Check segment outputs.
Same segment missing from all digits.	Display.	Check the display solder connections. If good, replace the display.
	MOS device.	Check segment output.
	Resistor arrays.	Check MR1 and MR2 for shorts.
Digits missing from the display.	Display	Check the display solder connections. If good, replace the display.
	MOS device.	Check for strobe outputs.
Display all 8's or random segments.	On-Off switch.	Check for intermittent condition.
	MOS device.	Turn off and check PØ at turn on.
One or more keys do not enter.	Keyboard	Check keyboard continuity, to printed wiring board.
	MOS device.	Check strobes and keyboard returns.
Display will not clear.	Keyboard.	Check keyboard continuity, to printed wiring board.
	MOS device.	Check strobe D11 and KB4.
Incorrect arithmetic operation (wrong answer).	MOS device.	Clear calculator and repeat operation observing each entry.
	Clock frequency.	R7
	Power supply circuitry.	Check power supply voltages.

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